

DOCUMENT RESUME

ED 410 895

HE 030 492

AUTHOR Kinnick, Mary K.; Ricks, Mary F.; Bach, Susan; Walleri, Dan; Stoering, Juliette; Tapang, Belen

TITLE Student Transfer and Outcomes between Community Colleges and a University within an Urban Environment. AIR 1997 Annual Forum Paper.

PUB DATE 1997-05-00

NOTE 25p.; Paper presented at the Annual Forum of the Association for Institutional Research (37th, Orlando, FL, May 18-21, 1997).

PUB TYPE Reports - Descriptive (141) -- Speeches/Meeting Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.

DESCRIPTORS *Academic Achievement; *Articulation (Education); College Attendance; College Credits; *College Transfer Students; Community Colleges; Educational Planning; Enrollment Influences; Higher Education; Institutional Research; State Universities; Statistical Analysis; Student Educational Objectives; *Student Mobility; Transfer Policy; Transfer Students; Two Year Colleges

IDENTIFIERS *AIR Forum; Clackamas Community College OR; Mount Hood Community College OR; Portland Community College OR; Portland State University OR

ABSTRACT

This paper describes the results of a collaboration between three local community colleges in Oregon, Clackamas Community College, Portland Community College, and Mount Hood Community College with Portland State University, to study student transfers among the institutions. Using a random sample of 504 students who had completed at least three credits during the academic year 1990-91, but did not enroll at the same college in the following year, the study examined student flow patterns, efficiency of the transfer process in terms of credit-hour loss, and academic performance patterns, focusing primarily on students' behavior and on the collective role of the four institutions in delivering postsecondary education. The study found the pattern of student movement between community colleges and the university to be complex, with students appearing to use the public institutions as a system rather than as four separate entities. The study also found very little of the credit losses experienced by transfer students to be the result of poor articulation between the institutions, but rather due to reasons such as advising problems, poor communication between institutions, or student choice to improve performance records. (Contains 13 references.) (CH)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

STUDENT TRANSFER AND OUTCOMES BETWEEN
COMMUNITY COLLEGES AND A UNIVERSITY
WITHIN AN URBAN ENVIRONMENT

Mary K. Kinnick

Professor, Educational Policy, Foundations, and Administrative Studies
Portland State University
P. O. Box 751-ED
Portland, OR 97207-0751
(503) 725-4627

Mary F. Ricks

Research Associate Professor and
Director, Institutional Research and Planning
Portland State University
P. O. Box 751-OIRP
Portland OR 97207-0751
(503) 725-3432

Susan Bach

Director, Institutional Research
Portland Community College
P. O. Box 19000
Portland, OR 97280-0990
(503) 614-7700

Dan Walleri

Director, Research, Planning and Computer Services
Mt. Hood Community College
Gresham, OR 97030
(503) 669-6924

Juliette Stoering

Research Associate
Mt. Hood Community College
Gresham, OR 97030
(503) 667-7112

Belen Tapang

Research Assistant Professor
Office of Institutional Research and Planning
Portland State University
P. O. Box 751-OIRP
Portland, OR 97207-0751
(503) 725-3432

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as
received from the person or organization
originating it.
☐ Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy.

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL
HAS BEEN GRANTED BY

AIR



for Management Research, Policy Analysis, and Planning

This paper was presented at the Thirty-Seventh Annual Forum of the Association for Institutional Research held in Orlando, Florida, May 18-21, 1997. This paper was reviewed by the AIR Forum Publications Committee and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC Collection of Forum Papers.

**Jean Endo
Editor
AIR Forum Publications**

Abstract

Renewed attention to the transfer process is emerging across the United States. In 1992 an urban university and three community college districts in a metropolitan area formed a partnership to study the transfer process among and between the institutions. This paper describes the results of that collaboration in terms of student flow patterns, the efficiency of the transfer process (credit hour loss between the community colleges and the university), and academic performance patterns. An overarching goal is to identify how students actually use the institutions in pursuit of their academic and vocational goals within an urban postsecondary system.

Introduction

The Governor's Commission on Higher Education in the Portland Metropolitan Area, in their final report in November 1990, recommended "It will be especially important to implement programs that link students so they can transfer smoothly from high schools to community colleges and then to Portland State University or other institutions." (1990, p. 45) Startup funding was made available through competitive grants to study and implement solutions for the problems identified by the Commission -- the "Portland Agenda." A Portland State University (PSU) faculty member received a grant to study student transfer processes and identify possible barriers to a smooth transfer from the three local community colleges (Clackamas Community College (CCC), Portland Community College (PCC), and Mt. Hood Community College (MHCC)) to the university using data from the four institutions.

The project was funded for the year beginning July 1, 1992. A research team was formed which included two faculty members from the School of Education at PSU and the directors of Institutional Research from the four institutions. This group became known as the University/Community College Research Consortium—the CRC.

The purpose of the group, agreed to at early meetings, (Kinnick 1994, p. 3) was "to conduct research designed to strengthen the transfer role of the metropolitan community colleges and the transfer process such that student educational success is enhanced." A Memorandum of Understanding, signed by the presidents of the four institutions, described the purpose of the CRC and its expected activities. Institutional Research directors polled administrators at their institutions to determine what information was essential to inform discussion regarding the transfer process, and their feedback helped to establish a focused research agenda with three research questions:

1. What are the patterns of student movement between the community colleges and the university?
2. Do students lose credits when they transfer from community colleges to the university? If so, what is the nature of the loss?
3. How well do community college students perform academically after transferring to the university?

Literature Review

Research on the community college transfer function has considered at least four major issues. A significant body of the literature has focused on articulation: the identification and promotion of strategies for facilitating transfer from community colleges to four-year institutions (Lynch, 1994; Stanley, Morse, & Kellett, 1992; Timmerman, 1995). Much of this literature is descriptive or policy-oriented, often dealing with state-level articulation agreements and their effectiveness.

A related approach has attempted to determine a transfer rate -- the percentage of community college students who actually transfer to a four-year institution. The work of Cohen (1992) at the Center for the Study of Community Colleges and the multi-state Transfer Assembly is an often-discussed example of this approach.

The area receiving the most attention has been follow-up studies that examine the performance of former community college students in pursuing the Bachelor's degree. Three sub-topics have received particular emphasis.

The most significant of this research has compared Bachelor's degree completion rates of students beginning their college studies at a community college with those beginning at four-year

institutions. The key finding here has been that "entering a community college seriously hampers the educational success of baccalaureate aspirants, apart from any effect that results from community college students having, on average, lower test scores and aspirations than comparable four-year college entrants" (Dougherty 1991, p. 312).

Several authors have focused on the now commonly observed phenomenon of "transfer shock" -- the drop-off in academic performance that many former community college students experience during their first term at a four-year college (Keeley & House, 1993).

Other researchers find that those community college students who do transfer are as successful, or even more successful, in academic performance and degree completion as native students (Lee, Mackie-Lewis & Marks, 1993; Pascarella & Terenzini, 1991; Piland, 1995).

The deleterious effect of beginning at a community college on baccalaureate attainment has been the focus of a fourth body of literature that takes a structural approach. Because the background characteristics and aspirations of community college students cannot explain differential performance, structuralists argue that the problem must lie in the nature of the community college as an institution. One suggested solution is that community colleges be transformed into branch campuses of four-year state institutions (Dougherty, 1991).

As the above review suggests, research on the community college transfer function has been extensive and often critical (Lee, Mackie-Lewis & Marks, 1993). A primary concern has been with how the community college prepares students to achieve the Bachelor's degree. The assumption that the pattern of attendance is simple and linear has been the basis of most research despite the findings reported by Adelman (1994, pp. 128-131) that there are at least ten distinct patterns of two/four-year attendance.

Another limitation to the prevailing research approach on transfer is that it is dated (Lee, Mackie-Lewis & Marks, 1993, p. 82). Much of the research is based on the National Longitudinal Study of 1972. Given the greater diversity of the postsecondary student population, transfer patterns in the 1990s may be quite different from the 1970s or 1980s.

Recently reported research suggests a different approach may be more effective. Adelman's finding of non-linear transfer behavior has already been cited. In addition, Piland (1995), Conklin (1995) and Ronco (1996) report findings suggesting a convoluted path to baccalaureate degree attainment. In the latter two studies, the results are reported as a "surprise" in that both researchers conducted their studies assuming the linear progression model. In the case of Conklin's (1995) study, multi-institutional movement emerged from a five-year longitudinal study of Kansas community college students. Ronco's (1996) results came from a study of "dropouts" from the University of Texas at El Paso in which a movement to community colleges was discovered. Piland (1995) explicitly tested the linear model using a sample of community college transfer students who subsequently earned a Bachelor's degree. Like the present study, Piland's sample was drawn from an urban environment (San Diego). He found that prior to transfer, these students attended multiple institutions, stopped out, and often enrolled part-time. Piland concluded (1995, p. 40) that "The notion of a student entering a community college directly after graduating from high school and taking 15 units a semester for four straight semesters and then transferring to a university to finish in two additional years is a myth."

Robertson (1992) explored the properties of "a particular, informally regulated social system: the urban postsecondary system (UPS)" (1992, p. 401). He asks, "...can linkages between public two-year and four-year colleges be improved to facilitate students' movement among UPS institutions?" (1992, p. 410).

Methodology and Findings

Conceptual framework

In keeping with the recent studies cited above, we have identified actual student transfer patterns before attempting to assess the effectiveness of the transfer process. We view the local urban postsecondary environment as a system. Our interest has been first to describe the movement of students within that system and second to seek to identify the factors that influence enrollment behavior. Our study design differs from those that describe the transfer function of community colleges in terms of linear movement to four-year institutions, calculation of a transfer rate, or access to educational opportunity via baccalaureate degree completion rates. Our focus is on student behavior and the collective role of four institutions in delivering postsecondary education -- rather than on the performance of a single institution. The contention at the heart of our study is that the linear progression of students from a community college to a university should not be assumed but is an hypothesis in need of additional testing.

We have treated the UPS in this study as a closed system, including the three public community colleges and one public university in the urban area. We acknowledge that in reality the system is open, with some students also earning credit from private institutions within the metropolitan area, and/or from public or private institutions outside the area. We did not attempt to construct student flow patterns reflecting all of the institutions the student had attended. Defining the data in such detail was beyond the scope of this study and was not necessary to address our major research questions. We also did not examine movement of students among the three community colleges. Finally, since the samples

we used originated with listings of students who departed the community college, they are not reflective of the entire population of the university.

Methodology

We identified two populations of students we wanted to track through our educational system. These populations included students who completed at least three credits at a UPS community college in a specific academic year (1985-86 or 1990-91) and who did not enroll at the same community college in the following year.

The Office of Institutional Research and Planning at the university became the central repository for data. Each community college provided data files containing unit record student information on credits completed at the community college, GPA, major, and degrees earned. The initial community college population consisted of 23,343 students in 1985-86 and 31,464 students in 1990-91. These data were then run against the university database, and where matches were found (4,505 students from 1985-86 and 5,057 students from 1990-91), additional information was provided by PSU. This included enrollment status (by term) to present, degrees earned, academic standing, university GPA during first term of attendance and most recent term of attendance, the total number of transfer credits accepted from all prior colleges, and demographic information including gender, ethnicity, and age.

These two sub-populations of students served as the basis for data analysis in the first phase of the study. We found a substantial number of different enrollment patterns and observed an apparent loss of transfer credit at this point. This confirmed the need for a more detailed transcript analysis during the second phase of the study in order to more fully investigate student flow among the institutions, examine the relationship between credits earned at the community college and credits accepted at the university, and evaluate academic performance.

Because transfer articulation agreements had been instituted in 1988-89 to ease transition from community colleges to the university, we decided to draw our sample from the 1990-91 sub-population only since the transfer experience for these individuals would be more comparable to that of currently enrolled students. A sample of 504 students was randomly selected and stratified proportionately by community college and student level at the University in order to be representative of the 5,057 members of this sub-population.

Members of the research team consulted with university admissions staff and registrar to examine sample community college and university transcript formats and transfer evaluation records. Forms for recording these data were developed, tested, and revised. This phase of the study was by far the most challenging because of the complexity and volume of the data, differences among institutions in how transcript data were presented, and the form in which transcript evaluation information was available. A coding scheme was developed to capture student enrollment patterns, and a data base was created to include student demographics, transcript data from each UPS institution, and transfer evaluation data from the university.

To address our first research question, student enrollment patterns were analyzed for the entire sample and several dominant subgroups were identified for comparative study concerning the two remaining research questions. Here, although our findings related to Question One emphasize the variety of enrollment avenues utilized by students, we chose to focus initially on individuals taking a traditional linear path from community college to university in the analysis of both transfer credit and academic performance. This group of 109 students had no prior postsecondary experience outside the UPS before enrollment at one of the three community colleges and no intervening experience prior to movement from the community college to the university. For purposes of this study, we refer to these students as LURTS – Linear Urban Transfer Students.

Phase 1 -- Initial Findings

One of the interesting early discoveries, confirming Adelman's (1994, pp. 128-131) research, was that students did not always follow a simple linear transfer pattern (Figure 1).

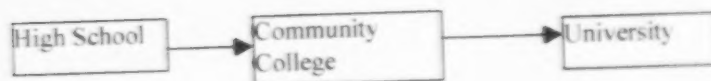


Figure 1. Linear Transfer Pattern

Overall, the transfer patterns were complex. Many possibilities for movement among the institutions were found, as shown in Figure 2.

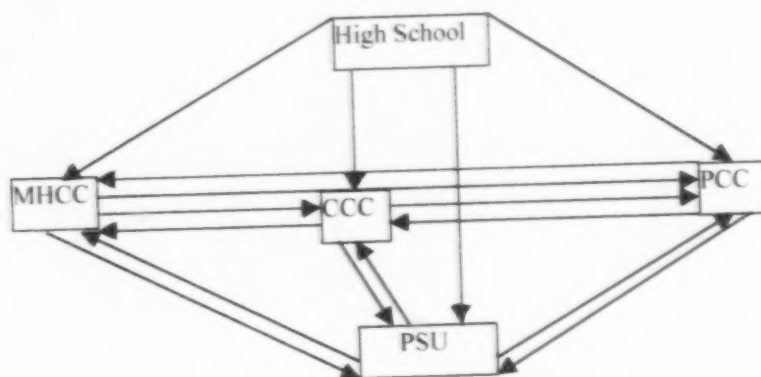


Figure 2. Transfer patterns in the urban area

Students moved among the three community colleges and the university as if they were part of a single complex educational system despite the fact that the institutions are entities of four separate governments, with entirely separate financial processes and curriculum structures. We found students who were concurrently enrolled during the same term at three community colleges,

at two community colleges, and at one or more community colleges and the university. We also found that students moved from the university to the community colleges, and that more members of the 1990-91 cohort made this sort of switch than did members of the 1985-86 cohort. Some students moved directly from the community colleges to graduate programs at the university. Table 1 shows the patterns of movement between the community colleges and the university that were recognized during the first phase of our study.

Table 1. Patterns of Movement Between Institutions as Discovered in Phase I of CRC Study

	1985-86 Cohort	1990-91 Cohort
No record of university attendance before cohort year	41.5%	24.4%
Attended university prior to cohort year	43.9%	61.1%
Enrolled at university and CC during cohort year	14.6%	14.5%

A crosstabulation of the credits earned at the community college with the total number of transfer credits accepted by the university showed differences which merited further investigation. For example, of 737 students from the 1990-91 cohort who had earned 90 or more community college credits, only 431 students had 90 or more credits accepted for transfer by the university. This discovery concerned us.

An examination of grade point averages revealed that transfer students from the community colleges in general performed well at the university. Approximately 90% of each cohort group who were admitted to the university remained in good academic standing after their first year at the university.

Phase II Findings

Student Flow Patterns - Total Sample

Student flow patterns revealed by transcript analyses were much more complex than those observed in Phase I analysis because we were able to view students' entire academic histories. While 76% of all students fell within one of seven dominant patterns, 74 different patterns of enrollment were identified for the sample group of 504 students. The majority (76%) of students began their postsecondary experience in the UPS at one of the three community colleges, 22% of the students (approximately 1 out of 5) initially entered the UPS through the university, and the remaining 2% began as concurrent enrollees.

It is important to note that these findings present a conservative view of the movement that actually occurred among all institutions attended. The coding structure did not capture enrollment at institutions outside the UPS, nor did it reflect changes that took place within a given coding category. That is, enrollment at Mt. Hood Community College followed by enrollment at Clackamas Community College followed by enrollment at Portland Community College would be represented by a single code (1). Concurrent enrollment at Portland State University and Portland Community College followed by concurrent enrollment at the university and Clackamas Community College would also be represented by a single code (3). Slightly more than half (51%) of the students in the sample made only one switch of category within the UPS. Another 22% made two switches, 10% made three switches, 9% made four switches, and the remaining 8% of the students made five or more switches in enrollment category. One peripatetic student managed nine switches in an academic career dating back to the days before the university's computer was installed in 1974 and was still enrolled at the university as an undergraduate in fall 1996. In all, this student actually made thirteen changes of institution! The mean

number of switches for all students was 2.07. Of the 382 students who entered the UPS at a community college, 63% made only one switch during the period of the study, typically from the community college to the university. Of the 111 students who began at the university, 52% made two switches—typically from the university to the community college and back to the university. Eleven students entered the system by concurrently enrolling at a community college and the university.

Sixty-eight percent of the students in our sample who entered the UPS through the community colleges moved to the university as admitted undergraduate students. An additional 25% moved on as non-admitted students (a classification which allows students to take up to eight credits per term without formal admission) and 8% moved from the community colleges to the university as post-baccalaureate or graduate students. These students had earned baccalaureate degrees outside the UPS and may have been using the community college to refresh skills or to complete course prerequisites for further graduate study. More than half (51%) of those who went from the community colleges directly to the university as admitted undergraduate students made no further moves in the system.

Females comprised 57% and males 43% of the total sample. Behavior differences based on gender were minimal; percentages of females and males entering the system through each of the three enrollment avenues (community college only, university only, or concurrent enrollment) were roughly comparable. There were no significant differences in the number of switches made by male and female students.

Students who were 16 to 21 years of age when they first entered a UPS school made up 79% of the sample. Slightly more than half (52%) of these students made only one switch, 23% made two switches, and 26% made three or more switches. Students aged 22-30 at first enrollment (13% of the sample) tended to move somewhat more frequently: 42% made one switch, 21% made two switches, and 36% switched three or more times. Older students appeared to move least among the institutions,

with 63% of those who entered the system at age 31 or older making only one switch.

Minority students comprised 18% of the sample population, although they represent only 13% of the metropolitan area population. More than half the minority students were Asian-Americans. Sixty-nine percent of minority students in the sample began their UPS experience at a community college compared to 75% of non-minority students, with African-American students (82%) more likely than other minorities (65%) to enter the system via this route. African-American students also display a more "traditional" linear enrollment pattern, with 53% moving directly from the community college to the university with no subsequent transfers compared to 33% for other minorities and 47% for non-minority students. Of the ten students who made the greatest number of switches, five were Asian-Americans, and two were members of other minority groups. Only three were non-minorities.

Credit Transfer Patterns – LURTS Subgroup

To examine the relationship between credits earned at the community college and credits accepted for transfer at PSU (transfer "efficiency") and academic performance after transfer, our study focused on the earlier-mentioned LURTS. These were the 109 students who entered the UPS through one of the three local community colleges and moved directly to the university as admitted undergraduates. Examination of LURTS demographics showed no major differences from the sample population of 504 except for the distribution of ethnic minorities. LURTS minorities included only African-American and Asian-American students, but no Hispanic or Native American students -- although Hispanics represent 2.4% and Native Americans 1.0% of the parent population.

Of the 109 LURTS, 95 submitted transcripts to the university for work completed at the community college. The number of credits ranged from 4 to 209, with an average of 91.3 credits earned. The number of credits accepted for transfer by the university ranged from 4 to 113, with an average of 75.5 credits accepted. Generally, the university accepts no more than 108 credits earned at a

community college. Fourteen LURTS chose not to submit transcripts for evaluation, although 28% of the credits they completed would have been transferable. Overall, there was evidence of a high rate of transferability of community college courses for all students. More than three-quarters (80%) of LURTS were able to transfer more than 75% of the credits they had earned at the community college.

Initial concerns regarding the apparent loss of community college credits that surfaced during Phase I of the study were addressed by a more detailed analysis of the types of credits not accepted for transfer by the university. Table 2 shows credit loss by category for the 95 students whose community college transcripts had been evaluated by the university.

Table 2. Credits Not Accepted by PSU by Category for LURTS

Category	Number of Students with Credits in this Category Not Accepted	Percentage of Students with Credits in this Category Not Accepted	Range of Credits Not Accepted	Mean Credits Not Accepted
Low Grade	30	32%	1 to 22 credits	6.9
Developmental Education	62	65%	1 to 29 credits	9.1
Professional/Technical	29	31%	1 to 55 credits	11.3
Duplicate Course	5	5%	3 to 4 credits	3.4
Over Maximum Allowed	20	21%	1 to 67 credits	16.5
Other	16	17%	2 to 5 credits	3.2

Since courses students took may fall into more than one of the categories shown, Table 2 does not sum to 100%.

Academic Performance after Transfer – LURTS Subgroup

Measures of academic performance after transfer for this subgroup are based on change in

Grade Point Average and degree attainment. Comparison of weighted community college GPAs for LURTS yields the following results:

Pre-transfer cumulative community college GPA	3.08
First term (graded enrollment) post-transfer GPA at university	2.77
Second term (graded enrollment) GPA at university	2.83
Cumulative university GPA as of Spring 1995	2.82

Students appeared to experience a GPA loss of 0.30 immediately following transfer from the community college and to recover slightly in subsequent terms at the university. We considered a student's GPA to be "Higher at University than at CC" if the university GPA was more than 0.25 higher at the university. A GPA was "Lower at University than CC" if the university GPA was more than 0.25 lower than the community college GPA. Differences between community college and university GPAs are shown in Table 3.

Table 3. Difference Between Cumulative CC GPA and 1st Term and Cumulative University GPA

	CC to 1 st Term University	CC to Cumulative University
Higher at University than CC	13%	17%
Same at University and CC	35%	40%
Lower at University than CC	52%	43%

Degree Completion – LURTS subgroup

In all, 53 students (49%) from the LURTS subgroup earned a baccalaureate degree at the university -- 35 students by Spring 1995 and an additional 18 by the following spring term (1996). The majority (57%) of those earning a BA/BS had not earned a community college degree, 26% had earned

an AAOT degree, and 17% had earned some other degree or certificate at the community college.

Higher proportions of students who completed the AAGT degree attained a baccalaureate degree than other community college transfers. Table 4 shows degree achievement.

Table 4. University Degree Completion by Degree Attained at Community College for LURTS

Community College Degree Achievement	N	Earned University degree	Did not earn University degree
Earned AAOT degree	21	67%	33%
Earned other CC degree	22	41%	59%
Earned no CC degree	66	46%	55%

Finally, based on data for the entire sample of 504 students, 39% of those who entered the UPS via the community college ultimately earned a bachelor's degree at the university, no matter what path they followed through the four institutions (and others outside the system).

Summary and Conclusions

We found the pattern of student movement between the community colleges and the university to be complex rather than straightforward. Students appear to use the public institutions in the metropolitan area as a system, even though the institutions are entities of four separate governmental agencies. Students who have moved from the community colleges to the university may return to the community college for additional course work. Students with a bachelor's degree who are contemplating graduate study may attend the community college to improve skills or refresh their understanding of basic subject matter.

Our study indicates that, among the LURTS, very little credit loss in transferring from the community colleges to the university can be attributed to poor articulation between the institutions. An argument can be made that credits which do not transfer as a result of low grades and those which

represent duplicate courses are a reflection of student performance and student choice to improve the record of performance, respectively. Developmental Education (remedial) courses are not intended to transfer -- they are meant to prepare students for college level work. Most Professional/Technical courses are intended to fulfill terminal degree requirements at the community college rather than to transfer. Students who present more than the maximum number of credits the university will accept may do so because of advising problems, or because of poor communication between the institutions. On the other hand, the large number of credits may also reflect exploration by the student or a choice by the student to move from one program of study to another.

LURTS attending the community college experience a drop of approximately 0.30 GPA immediately following transfer from the community college to the university. Cumulative GPA tends to increase as the student spends more time at the university.

LURTS in the sample who completed the AAOT degree, (a block transfer degree which insures that students meet lower division university requirements) and enrolled at the university completed bachelor's degrees at higher rates than students who earned other degrees at the community colleges or who earned no community college degree.

Regardless of the path they took, 39% of all students who entered the UPS via the community college and later attended the university ultimately earned a bachelor's degree from the university.

A number of research issues remain on the CRC research agenda. We hope to examine time-to-degree as a measure of transfer efficiency, considering both total elapsed time and number of terms enrolled. In doing so, we plan to compare the LURTS with other subgroups to determine if the LURT enrollment pattern carries advantages for the student and whether there are disadvantages for students who follow other enrollment paths.

We also plan to look more closely at the credit hour loss associated with particular professional-technical course work. Many, if not most, of these courses are designated as non-transferable. We are interested, however, in knowing more about the kinds of student learning that occurs through this course work and whether some of this learning might properly be transferable.

We would also like to understand more about the role developmental education courses play in the preparation of community college students for college-level work. Sixty-five percent of the LURTS took at least one developmental education course; the average number of credits taken by these students was nine. We are interested in comparing the subsequent performance of students who took developmental education classes with those who did not.

Further, we are interested in examining the full array of student flow patterns, including private institutions within the UPS and institutions outside the system. This broader investigation would provide a more complete picture of how students are making use of the educational resources available to them.

We have heeded Adelman's advice (1994, 125-127) and have purposely avoided any characterization of the findings of our study as "good" or "bad." Further, we have not drawn inferences from the study about the degree to which our institutions are functioning "effectively." Our primary goal has been to describe student behavior accurately. Our hope is that these data will inform continuing policy discussions about the transfer function within an urban postsecondary system.

Acknowledgments

We gratefully acknowledge funding provided by Portland State University and a Portland Agenda grant for Phase I of the study. Funding provided by the presidents of Portland State University, Clackamas Community College, Mt. Hood Community College, and Portland Community College which allowed us to continue to explore the transfer experience in Phase II.

We also acknowledge the contributions of a number of colleagues who have played important parts in the research we have reported here. Mr. Lee Fawcett, Director of Institutional Research at Clackamas Community College, participated in the project until his retirement. Ms. Melissa Banks, Research Coordinator and Planning Analyst at Clackamas Community College joined the team for the last few months of the study. Ms. Laura Johnson, Graduate Assistant in the School of Education at Portland State University, coded and entered data for the transcript study. Mr. Robert Tufts (Registrar), Mr. Jesse Welch (formerly Director of Admissions) and Mr. Tim McBride (Assistant Director of Admissions) at Portland State University provided assistance in interpreting transcripts and transfer evaluations.

REFERENCES

- Adelman, C. (1994). Lessons of a Generation: Education and Work in the Lives of the High School Class of 1972. San Francisco: Jossey-Bass.
- Cohen, A. M. (1992). Calculating the Rate of Transfer from Community Colleges to Public Universities in California: A Report to the California Policy Seminar. Los Angeles: University of California at Los Angeles. (ERIC Document Reproduction Service No. ED 351 087)
- Conklin, K. A. (1995). Community college students' persistence and goal attainment: a 5-year longitudinal study. AIR Professional File, 55, 1-8.
- Dougherty, K. J. (1991). The community college at the crossroads: the need for structural reform. Harvard Educational Review, 61 (3), 311-336.
- Keeley, E. J. and House, J. D. (1993) Transfer Shock Revisited: A Longitudinal Study of Transfer Academic Performance. Paper presented at the Association for Institutional Research annual forum. Chicago, IL.; May 17. ED 357 774.
- Kinnick, M. (1994) Portland State University/Community College Research Consortium Report. School of Education, Portland State University. Portland, OR. Unpublished Report.

Lee, V. E., Mackie-Lewis, C., and Marks, H. M. (1993). Persistence to the baccalaureate degree for students who transfer from community college. American Journal of Education 102: 80-114.

Lynch, R. L. and others (1994). Seamless education: a regional view of postsecondary transfer policy and practice. Atlanta, GA.: Georgia Department of Technical and Adult Education. ED 391 102.

Piland, W. E. (1995). Community college transfer students who earn Bachelor's degrees. Community College Review, 23 (4), 35-44.

Robertson, D. (1992). Urban postsecondary systems: Higher education's infrastructure in American Cities. The Review of Higher Education, 15 (4), 401-415.

Ronco, S. L. (1996). How-enrollment ends: analyzing the correlates of student graduation, transfer and dropout with a competing risks model. AIR Professional File, 61, 1-12.

Stanley, P., Morse, B., and Kellett, C. (1992). In California, win+win+win = Bachelor's degree. Vocational Education Journal, 67 (4), pp. 32-33.

Timmerman, L. and others (1995). Transfer success work group report. Austin, TX.: Texas Higher Education Coordinating Board. ED 381 212.

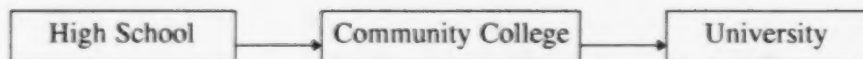


Figure 1. Linear Transfer Pattern

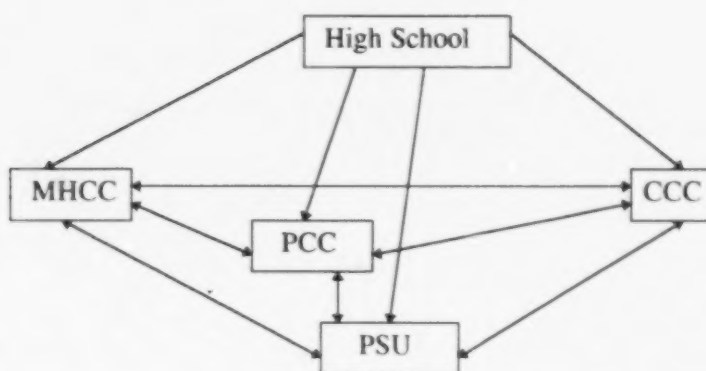


Figure 2. Transfer Patterns in the Urban Area.